



I - on radius to pronate forearm.

Supinator - O - lateral epicondyle

I - ulna

- wraps around back of radius to front & supinates forearm.

Biceps also supinates.

- stronger than pronator
screwdriver vs supinator.

Muscles of shoulder joint

- all possible movements, as ball & socket joint.

1. { O - from trunk (thorax)

I - scapula & humerus.

2. { O - from scapula or clavicle

I - humerus, near shoulder joint.

use - to steady shoulder joint.

1. - longer range of movement.

use - pull humerus forward as flexors.

" " backward as extensors

" " laterally as abductors

In raising forward, scapula swings as the humerus moves. Scapula swing increases shoulder movement.

Deltoid (round) - Rotator.

O - from lateral border of scapula.

I Deltoid major - front of humerus

- medial rotator.

Deltoid minor - back of humerus

- lateral rotator.

laterally in writing line, T.M. brings hand back.

Serratus Anterior.

Py

- 1 - on medial border of scapula.
- pulls scapula towards sizer on side of chest.
- movement is protraction (drawing scapula forward)

Lower limb Muscle Groups.

Hip muscles - ball & socket joint - all possible move.

Hip flexors - pull vertically in front of joint in 2 layers.

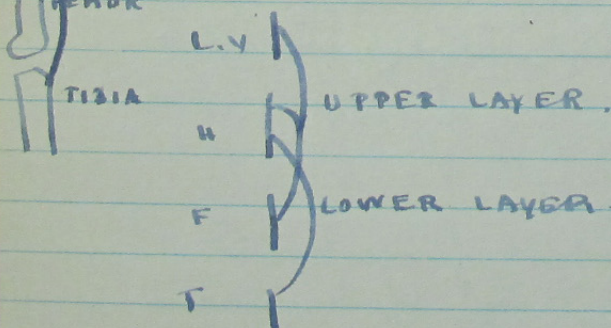
upper - ilio-psoas.

- O - from lumbar vertebrae
- iliac fossa.
- crosses front of hip.
- I - lesser trochanter.

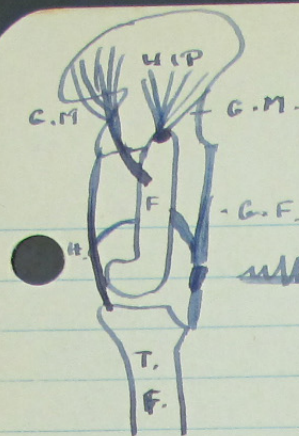
use - flexes hip

lower - rectus femoris (down front of thigh)

- O - anterior inferior spine of iliac.
- I - tuberosity of tibia.



Hip extensors - pull vertically behind the joint upper & lower.



upper - gluteus maximus.

- biggest muscle of buttocks.

O - dorsum of ilium, crosses back of hock-joint.

I - back of upper part of femur.

lower - hamstring muscles.

- back of the thigh

O - ischial tuberosity

I - back of upper ends of both leg bones

use - pulls back femur

flexes the knee.

Abductors - swing femur laterally.
gluteus medius

O - dorsum of ilium

I - great trochanter.

use - prevent pelvis tilting to side of raised foot in walking.

- anterior fibres rotate pelvis medially, posterior laterally.

Adductors - to pull femur medially.

- attached at O to pubic arch.

O - pubic arch.

I - linea aspera

- pull below the joint

use - in gripping a horse.

Knee muscles - knee joint a hinge.

- a little rotation

Knee flexion - posterior movement.

Flexors - pull vertically behind knee.

Hamstrings -

Extensors - pull in front of knee.

- quadriceps femoris.

upper - O - front of hip bone.

lower - O - linea aspera.

Muscles wrap around side of femur.

I - patella.

From patella pulls on tuberosity of tibia through patellar ligament.

- extends knee & rectus femoris part will also flex hips.

Calf muscles - Superficial muscles on back of leg.

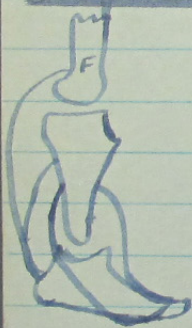
O - back of femur, above condyles.

- back of leg bones.

I - tuberosity of calcaneum

use - flex the knee.

- plantar flex the foot, leg pulling up the heel.



Deep muscles of back of leg.

O - back of leg bones run behind malleoli

I - sole of the foot, some to toes.

use - plantar flex the ankle.

- (some) flex the toes.

- medial ones invert the foot.
(turn sole medially)

- lateral ones evert foot.

● Anterior leg muscles

- - front of leg bones, cross front of ankle joint
- use - dorsiflex ankle
- - dorsum of foot & toes.
- use - extend toes

Medial one - invert, the lateral - evert.

Short muscles of foot - whole course in foot.

- most on the sole.
- arranged as in the hand.
- use - to give spring to step & support arches (springs) of foot.

● Rectus abdominis

- long flat strip down either side of mid-line.

upper attachment - ribs, beside lower end of sternum.

lower " - pubic crest.

- furrow between 2 muscles called linea alba.
- r. ab. segmented, shows on anterior surface, divided by transverse tendons.



- use - to protect abdominal organs & to flex the trunk.

Abdominal wall has 3 broad flat muscles.

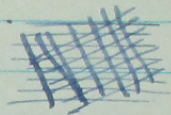
- attached - at side to lower ribs
- at back to lumbar vertebrae
- at front to hip bones.

- fleshy parts at side

- have flat sheet-like tendon (aponeuroses)
blind in front.

action - compress abdominal contents

- protect internal organs.



3 layers - 3 ply construction

- good support to abdominal wall.

Extensors - sacro-spinalis

- runs from back of sacrum, up
back of trunk

- attached to backs of ribs + vertebrae.

- in overlapping ridges.

use - to extend trunk.

- to balance trunk in walking.

Anatomy - 1938

Pelvic girdle

2 or coxae & sacrum.

- articulate at front
- sacrum behind.
- made for stability (shoulder for mobility)
- strong ridges of bone for transmission of weight.

(childhood) - 3 bones in hip.

- ilium
- ischium
- pubis
- join at acetabulum.
- upper $\frac{2}{3}$ is ilium (body).

Wing - etc

- upper border - iliac crest.
- ant. sup. iliac spine
- post. " " "
- up from crest of ilium
- 3 layers abdominal muscles
- obliquus internus
- obliquus internus
- transversus
- tensor fasciae latae.

back of crest.

- latissimus dorsi
- sacrospinalis

ant. sup. spine.

- sartorius (tailor).
- inguinal lig.

ant. inf. spine.

- rectus femoris
- ilio - femoral lig.

Post. int. iliac spine (dimples)

- centre of sacro-iliac joint.

Anter surface.

- gluteal lines.

post g.l.

middle g.l.

inf. g.l.

- gluteus maximus.

gluteus medius

gluteus minimus

reflected tendon of

rectus femoris.

behind g.l.

above + behind g.l.

above g.l.

below g.l.

Inner surface of ilium (iliac fossa)

- iliac - auricular surface.

(art. with sacrum)

above - tuberosity

- strong inter-osseous lig.

Ilio-pubic eminence.

Ischium.

Body forms part of inner surface of true pelvis + post. $\frac{2}{3}$ of acetabulum.

Greater sciatic notch.

Spine of ischium.

- sacro-spinous lig.

Lesser sciatic notch.

Tuberosity of ischium

- takes with weight.

- hamstrings

sacro-tuberos lig. (side.)

Ramus - passes down to unite
with inf. ramus of pubis,
forms lower border of obturator
foramen.
- adductor magnus.

Pubis - ^{ant} inf. $\frac{1}{3}$ of acetabulum
Superior ramus.

- marked by 2 lines.
- 1. obturator crest
- 2. pectineal line.

Crest of pubis - ant. 1".
att. rectus abdominus.

Symphysis pubis.

- inf. ramus of pubis united
with inf. ramus of ischium
lower border of acetabulum.
- to body & inf. ramus of pubis
adductor muscles.

Acetabulum. (wineglass cup - head of femur)
lunate (art.) surface
fossae (acetabular)
acetabular notch.

Pelvic girdle

greater - false pelvis.

lesser - true pelvis.

Inlet - prominence of pelvis behind

follows arcuate line to symphysis pubis

Outlet - lower arc.

irregular behind - coccyx + laterally ischial tuberosities

front - pubic arch.

Pelvis - colon, bladder, rectum.

- in relation to trunk, position of pelvis oblique.

- apex symphysis + 2 superior ramus of spine - vertical plane.

Sitt. pos. - pelvis rotates up, ant. horn of ischial tuberosities

- variations in inclination of pelvis occur at lumbar-sacral joint.

Differences in male + female pelvis

Male - rougher + thicker Female - delicate

- pubic arch - 70°

- arch - 90°

- acetabula - deeper

- shallow +

under short

- pelvic inlet - Δ

- round

- strong

- wide + deeper

Applied Anatomy of Pelvis

Fractures of pelvis usually crushing violence - break occurs at weakest point - pubic + ischial rami.

Serious - injury to pelvic viscera.



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